Feb. 2, 1971 P. CRAIN 3,560,037

SLIDING WINDOW LATCH

Filed July 28, 1969 3 Sheets-Sheet 1

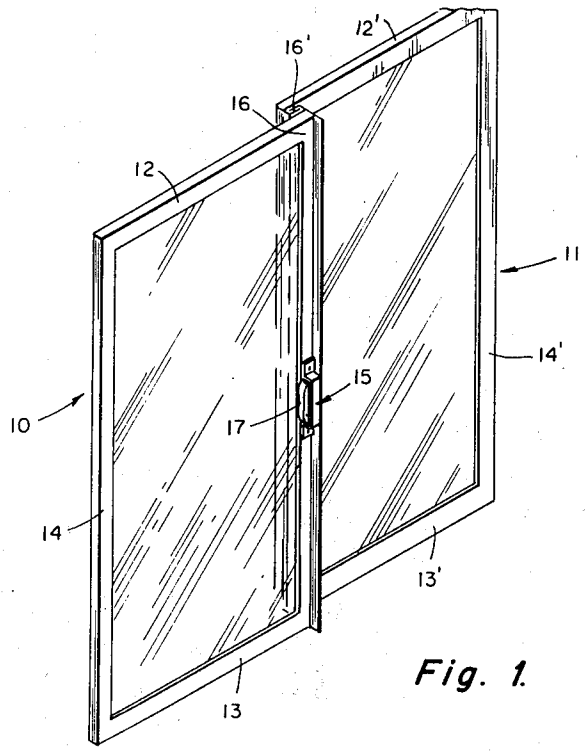


Fig. 1.

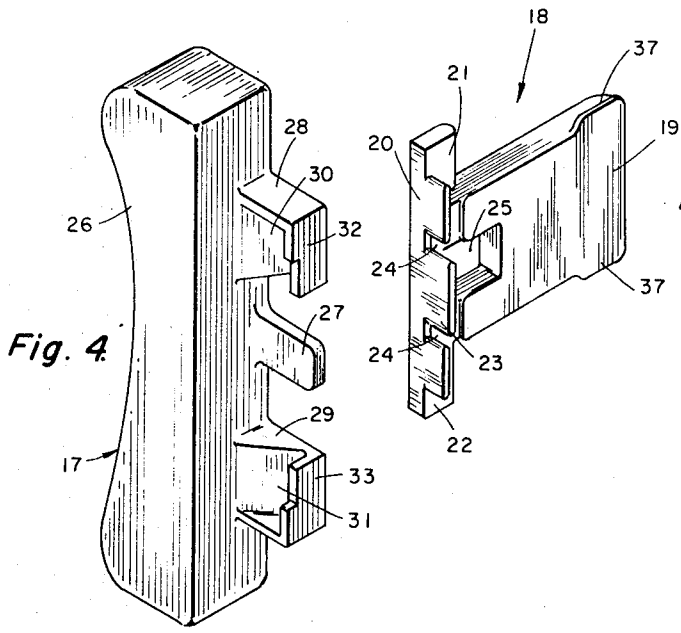


Fig. 4.

Fig. 3.

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SLIDING WINDOW LATCH

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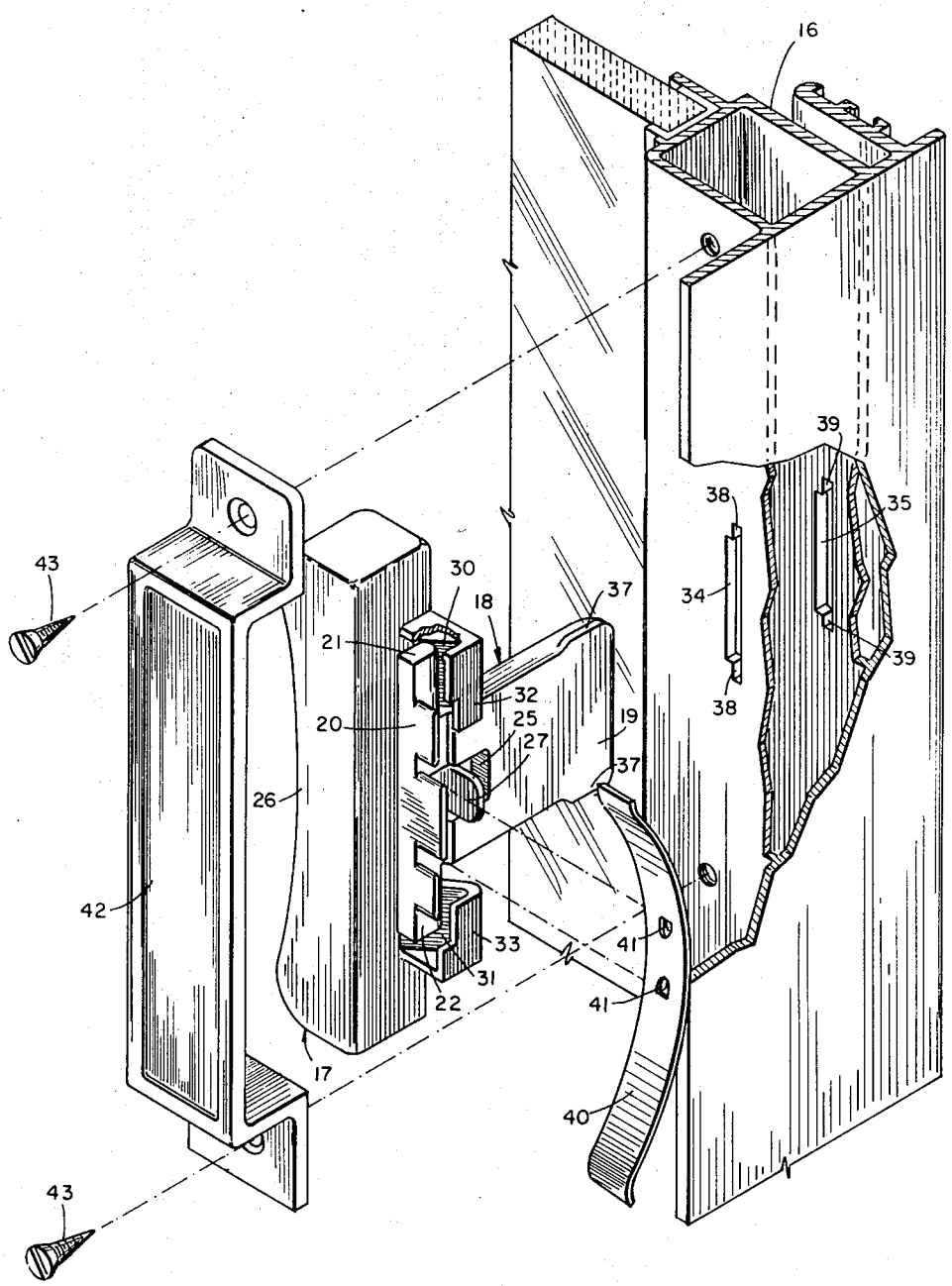


Fig. 2.

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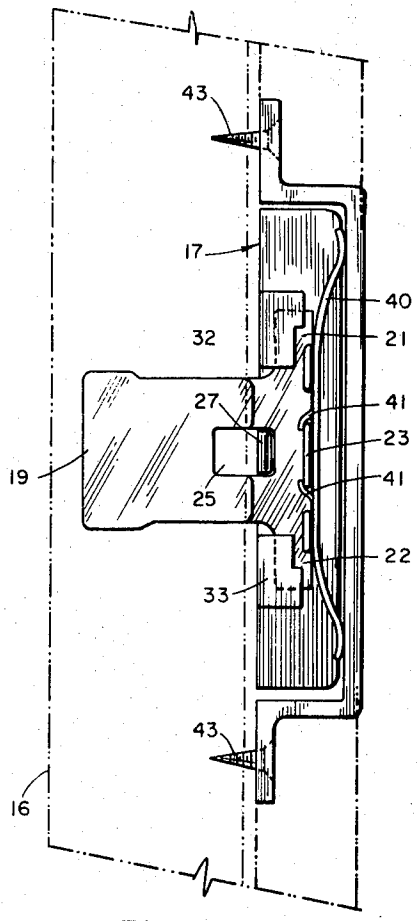


Fig. 5.

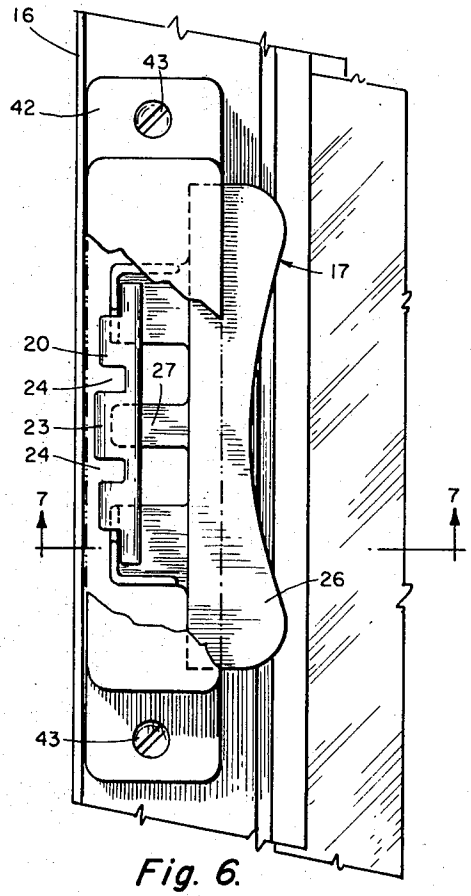


Fig. 6.

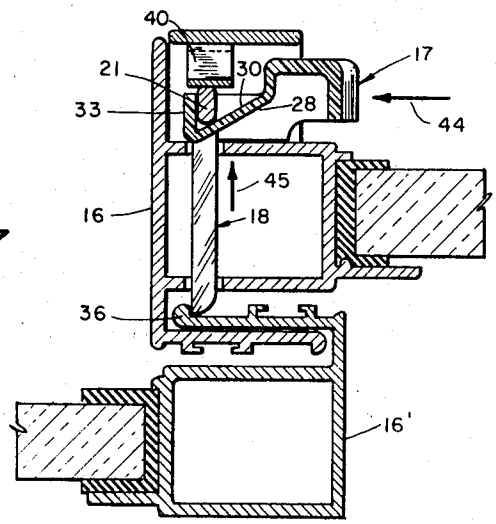


Fig. 7.

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3,560,037

SLIDING WINDOW LATCH

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Int. Cl. E05c 1/16, 7/02
U.S. Cl. 292—170 9 Claims

ABSTRACT OF THE DISCLOSURE

A latch for sliding windows which consists of a latching element having an extended flange at one end and an actuator comprising a guide member which slides within an aperature in the latching element. Camming surfaces provided on the actuator engage the flange extensions and translate the latching element in a direction normal to the direction of movement of the actuator. A spring affixed to the latching element flange is held in compression by a housing member.

BACKGROUND OF THE INVENTION

This invention relates to a window latch and in particular to a latch for releasably securing sliding windows.

Sliding windows are often employed in homes and commercial buildings because they provide good protection against external weather conditions, are easy to operate and are attractive in appearance. Such windows require latches designed to be operated only from the inside of the building, are reliable and are relatively inexpensive to manufacture. Accordingly, I have invented a latch for sliding windows which meets these criteria.

SUMMARY OF THE INVENTION

My latch, which is normally secured to the stile of a sliding window, comprises a latching element having a tongue at one end for engaging the stile of a second window and, at the opposite end, a flange provided with first and second extensions. The latching element is translated by an actuator having a guide member which slides within an aperture in the surface of the latching element and first and second camming members located on either side of the guide members. The first and second extensions on the latching element flange slidably engage the sloping surfaces of the first and second camming members resulting in translation of the latching element in a direction normal to the displacement of the actuator. A spring affixed to the latching element flange is held in compression by a housing member attached to the stile of the sliding window.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 shows a pair of sliding windows with the latch affixed thereto.

FIG. 2 is an exploded view showing how the various latch elements cooperate.

FIG. 3 is a perspective view of the latching element.

FIG. 4 is a perspective view of the actuator.

FIGS. 5–7 are sectional side, elevation and plan views of the assembled latch.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIG. 1, there is shown a pair of sliding windows **10** and **11** each having top rails **12**, **12'**, bottom rails **13**, **13'** and outer stiles **14** and **14'**. A latch shown generally at **15** is secured to the inner stile **16** of sliding window **10**. Latch **15**, which secures stile **16** of window

10 to overlapping stile **16'** of window **11**, is released by pressing actuator **17** to the right, this motion also sliding window **10** to its open position.

Details of the latch and the method of mounting it to stile **16** are shown in FIGS. 2, 5, 6 and 7 and perspective views of the latch element **18** and actuator **17** are depicted in FIGS. 3 and 4, respectively. As illustrated in FIG. 3, latching element **18** comprises a tongue **19** located at one end and a flange **20** at the other end. Flange **20** is provided with first and second extensions **21** and **22** and an edge portion **23** containing slots **24**. A rectangular aperture **25** is centered in the latching element adjacent flange **20**.

As shown in FIG. 4, the actuator **17** comprises a handle portion **26**, a guide member **27**, and first and second camming members **28** and **29** located on either side of guide member **27**. The camming members **28**, **29** are each provided with a camming surface **30**, **31** which slopes downward from the rear of handle **26**. Edges **32**, **33** extend upward from camming surfaces **30**, **31** and, as shall be shown hereinafter, act in cooperation with latching element **18** to limit the motion of actuator **17**.

Referring now to the exploded partial perspective view of FIG. 2 and the sectional view of FIGS. 5–7, it is seen that guide member **27** of actuator **17** slides within aperture **25** in latching element **18**. Extensions **21** and **22** on flange **20** ride on the surfaces **30** and **31** respectively of camming members **28** and **29** of actuator **17**. Tongue **25** of latching element **18** slides within the slots **34** and **35** in inner stile **16** to engage the holding flange **36** of stile **16'** as shown in FIG. 7. Lateral movement of tongue **25** is limited by lips **37** which fit within the narrowed ends **38** and **39** of slots **34** and **35**.

A leaf spring **40** is secured to flange edge **23** of flange **20** by punched out clips **41** (see FIG. 5) which fit into slots **24**. A housing **42** is secured by screws **43** to stile **16** thereby compressing spring **40** and holding the latch assembly in position.

FIGS. 5, 6 and 7 show the latch in its normal position in which latching element **18** is held in contact with stile **16'** by leaf spring **40**. As best shown in FIG. 6 (in which leaf spring **40** has been omitted for clarity) and in FIG. 7, actuator **17** is urged outward by the pressure of flange extensions **21** and **22** on camming surfaces **30** and **31**. Actuator **17** is held within the assembly by extensions **21** and **22** which press against camming member edges **32** and **33** thereby preventing the actuator from moving past the position shown in FIGS. 6 and 7.

Latching element **18** is disengaged from stile **16'** by pressing actuator **17** in the direction of arrow **44** (FIG. 7). This movement of actuator **7** causes flange extensions **21** and **22** to slide up on camming member surfaces **30** and **31** thereby displacing latching element **18** in the direction of arrow **45** and moving tongue **25** out of contact with flange **36** in stile **16'**. Removal of pressure on actuator **17** permits spring **40** to restore the latching element **18** and actuator **17** to the positions shown in FIGS. 5–7.

What is claimed is:

1. A latch for a sliding window comprising

(a) a latching element having a tongue at one end and including first and second extensions, said latching element having an aperture in the surface thereof,

(b) an actuator having a guide member slidably positioned within the aperture of said latching element and first and second camming members located on either side of said guide member, the first and second extensions of said latching element slidably engaging the surfaces of said first and second camming members,

(c) spring means for resiliently urging said latching element into its latching position, and

(d) means for holding said spring means under compression.

2. A latch for a sliding window as defined by claim 1, wherein said first and second camming members have edges extending upwardly from the surfaces of said camming members to engage the extensions of said latching element, said extensions limiting the displacement of said actuator.

3. A latch for a sliding window as defined by claim 1, wherein the spring means is secured to said latching element.

4. A latch for a sliding window as defined by claim 3, wherein said spring means secured to said latching element is a leaf spring and the means for holding said spring under compression is a housing secured to said window.

5. A latch for a sliding window as defined by claim 4, wherein said leaf spring is secured to a flange affixed to the opposite end of said latching means.

6. A latch for a sliding window as defined by claim 1, wherein the first and second extensions of said latching element are secured to a flange affixed to the other end of said latching element.

7. A latch for securing first and second sliding windows having overlapping first and second stiles, said first stile having at least one aperture therein and said second stile having holding means, said latch comprising:

(a) a latching element having a tongue at one end slidably positioned within the aperture in said first stile, said tongue engaging the holding means on said second stile, said latching element further including a flange having first and second extensions and an aperture in the surface thereof,

(b) an actuator having a guide member slidably positioned within the aperture of said latching element and first and second camming members located on either side of said guide member, the first and second extensions of said latching element slidably engaging the surfaces of said first and second camming members, said actuator translating said latching element in a direction perpendicular to the direction of placement of said actuator,

(c) spring means for resiliently urging said latching element into its latching position, and

(d) housing means secured to the surface of said first stile for holding said spring under compression.

8. A latch for securing first and second sliding windows as defined by claim 7 wherein said first and second camming members have edges extending upwardly from the surfaces of said camming members to engage the extensions of said latching element, said extensions limiting the displacement of said actuator.

9. A latch for securing first and second sliding windows as defined by claim 6 wherein said spring means is a leaf spring secured to said flange.

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